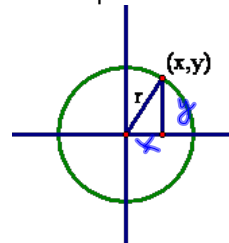


11.7 Notes

Equations of Circles

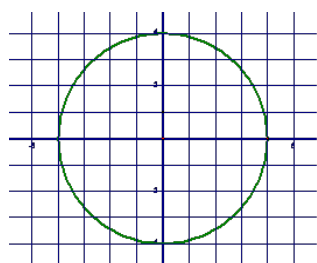
Use Pythagorean Theorem to complete:

$$r^2 = \underline{x^2} + \underline{y^2}$$

This is the equation for a circle centered at the **origin**.

Write the equation for the following circles:

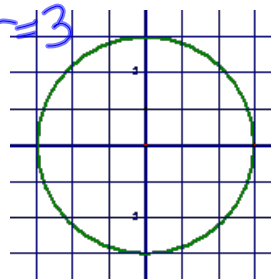
1. $16 = x^2 + y^2$



$r = 4$

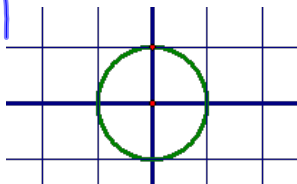
2. $9 = x^2 + y^2$

$r = 3$



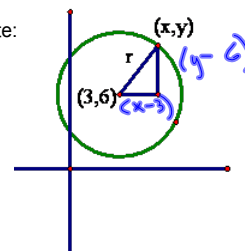
3. $1 = x^2 + y^2$

$r = 1$



Use Pythagorean Theorem to complete:

$r^2 = (x-3)^2 + (y-6)^2$
 $C(3,6)$



$r^2 = (x - h)^2 + (y - k)^2$

This is the **equation of a circle in standard form**.

Given the equation, what is the center and radius?

$r^2 = (x-h)^2 + (y-k)^2$

$25 = (x - 3)^2 + (y - 8)^2$

1. C(3 , 8) r = 5

$$16 = (x + 5)^2 + (y - 2)^2$$

$$\sqrt{16} = 4$$

$$2. C(-5, 2) r = 4$$

$$\sqrt{16}$$

$$36 = x^2 + y^2$$

$$3. C(0, 0) r = 6$$

$$81 = (x - 12)^2 + (y + 10)^2$$

$$4. C(12, -10) r = 9$$

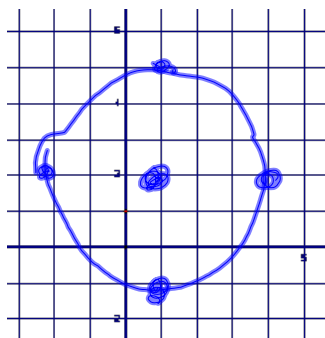
Given the center and radius, write the equation.

$$5. C(1, 2) r = 3 \quad 9 = (x-1)^2 + (y-2)^2$$

$$6. C(-3, 6) r = 7 \quad 49 = (x+3)^2 + (y-6)^2$$

$$7. C(8, 0) r = 10 \quad 100 = (x-8)^2 + y^2$$

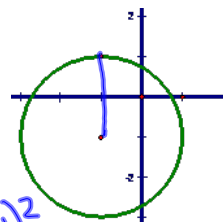
Graph #5



8. Use the picture to the right. What is the equation?

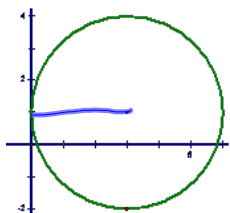
$$C(-1, -1) r = 2$$

$$4 = (x+1)^2 + (y+1)^2$$



9. Use the picture to the right. What is the equation?

$$C(3, 1) r = 3$$



$$9 = (x-3)^2 + (y-1)^2$$

HW
p.629-632
2-12, 16-18, 22-25